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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,520	04/19/2001	Geoffrey T. Haigh	A0312/7393 SJH	9453
23628	7590	08/16/2004	EXAMINER	
WOLF GREENFIELD & SACKS, PC FEDERAL RESERVE PLAZA 600 ATLANTIC AVENUE BOSTON, MA 02210-2211			DEBERADINIS, ROBERT L	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/838,520

Applicant(s)

HAIGH ET AL.

Examiner

Robert DeBeradinis

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 14-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/10/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 5/10/04 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 16 are rejected under 35 U.S.C. 102(b) as being anticipated by KUSUNOKI et al. 5,781,071.

Regarding claim 14.

KUSUNOKI discloses an information signal isolator (inherent property of transformer, figure 6A, coils are not connected) comprising:

A first substrate;

A first passive component formed on the first substrate (column 3, lines 31-67);

An isolation layer (silicon nitride, column 6, line 49) formed over the first passive component;

A second passive component formed over the isolation layer;

The first and second passive components being coils;

An input (47) for receiving an input signal; and

A driver circuit (amplifier 46) coupled between the input and one of said passive components.

Regarding claim 16.

KUSUNOKI discloses wherein the first substrate is a semiconductor substrate (column 1, line 7).

Regarding claim 17.

KUSUNOKI discloses wherein the driver circuit also is formed on the first semiconductor substrate (column 1).

Regarding claims 19, 20.

KUSUNOKI discloses wherein the first passive component is formed on top of the first substrate (figure 6B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 22, 23, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over KUSUNOKI 5,781,071.

Regarding claims 21, 22, 23, 26.

KUSUNOKI discloses the isolator of claim 14.

KUSUNOKI does not teach a third passive component on the substrate, a second isolation layer over the third passive component, and a fourth passive component formed over the second isolation layer, wherein the driver circuit provides signals to the first and third passive components.

The Examiner takes official notice. The forming of the third, fourth passive components and the second isolation layer is merely a duplication of the process that formed the first and second passive components and the first isolation layer.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify KUSUNOKI to have the above arrangement of passive components. The motivation would be to isolate the input circuit ground from the output circuit ground (column 1).

Claims 24, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over KUSUNOKI 5,781,071 in view of WENAAS 4,660,014.

Regarding claims 24, 27.

KUSUNOKI discloses the isolator of claim 14 wherein the first and second components are referenced to separate grounds (figure 6A terminal 18 is not common to 14 or 15 and 19 is not common to 14 or 15).

KUSUNOKI does not disclose Faraday shielding between the first and second passive components, with the Faraday shield referenced to the same ground as the second passive components.

WENAAS discloses Faraday shielding to reduce the capacitive coupling between the transformer windings (column 1, lines 52-68, column 2, lines 1-37).

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the teaching of KUSUNOKI to include Faraday shielding between the first and second passive components, with the Faraday shield referenced to the same ground as the second passive components. The motivation would be to reduce the capacitive coupling between the first and second passive components and the motivation to use the same ground as the second passive component would be the designer's choice possibly the desire to reference the shield to the low voltage side of the transformer.

Claims 15, 18, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over KUSUNOKI 5,781,071 in view of MEINEL 4,780,795.

Regarding claims 15, 25.

KUSUNOKI discloses:

A first substrate;

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A first passive component formed on the first substrate (column 3, lines 31-67);

An isolation layer (silicon nitride, column 6, line 49) formed over the first passive component;

A second passive component formed over the isolation layer;

The first and second passive components being coils;

An input (47) for receiving an input signal; and

A driver circuit (amplifier 46) coupled between the input and one of said passive components.

KUSUNOKI does not disclose wherein the first and second passive components being capacitor plates.

MEINEL discloses an isolation amplifier utilizing fringe capacitors as small signal isolation barriers between input and output portions of isolation amplifiers.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the isolator disclosed by KUSUNOKI to have a capacitive as the isolation barrier instead of the transformer. The motivation would be to reduce the size of the isolator (MEINEL column 1, lines 58-61).

Regarding claim 18.

KUSUNOKI discloses the isolator of claim 16.

KUSUNOKI does not disclose wherein the driver is formed on the second substrate.

MEINEL discloses driver (76) located on a first substrate and a differential amplifier (77) located on a second substrate (figure 6). The differential amplifier drives the circuitry that's on the second substrate.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the isolator disclosed by KUSUNOKI to form the driver circuit on the second substrate. The motivation would be to drive the circuits that are located on the second substrate.

Any inquiry concerning this communication should be directed to Robert L. DeBeradinis whose number is (571) 272-2049. The Examiner can normally be reached Monday-Friday from 8:30 am to 5:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Brian Sircus, can be reached on (571) 272-2058. The Fax phone number for this Group is (703) 872-9306.

RLD

JUNE 4, 2004

A handwritten signature in black ink, appearing to read "Robert L. DeBeradinis". The signature is written in a cursive, flowing style with a large initial "R".